

**REMARKS**

Claims 1-22 constitute the pending claims in the present application, and claims 20 and 21 are currently under consideration. Applicants cancel, without prejudice, claim 21. Applicants add new claims 23-25. Support for the subject matter of these claims is found throughout the specification. No new matter has been entered. Specifically, support for new claim 23 can be found on page 12, lines 9-11, and support for new claims 24-25 can be found on page 9, lines 15-23 and page 21, lines 3-18. Applicants respectfully request reconsideration in view of the following remarks. Issues raised by the Examiner will be addressed below in the order they appear in the prior Office Action.

1. The Office Action alleged that Applicants had not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120. Applicants traverse this objection and contend that the objection is moot in light of Applicants' amendment to the specification.

Applicants point out that an Application Data Sheet correctly outlining Applicants' priority claim was filed along with the instant application, and Applicants enclose herewith a copy of the Application Data Sheet. (Exhibit 1). Nevertheless, to further clarify any possible misunderstanding regarding Applicants' priority claim, Applicants have amended the first paragraph of the specification to reiterate the relationship between the present application and the applications to which the present application claims priority. Applicants' amendment to the specification to incorporate the priority information outlined in a previously filed Application Data Sheet is believed to obviate any objection.

2. Claims 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. Applicants traverse this rejection and contend that the rejection is moot in light of the amended claims.

a. The Office Action alleges that recitation of "patched protein" without reference to particular sequence identifiers renders the claim indefinite. Applicants respectfully disagree with this assertion. In the context of the detailed description in the application of patched nucleic

acids and proteins for a variety of species, Applicants contend that one of skill in the art could readily appreciate the metes and bounds of the claimed subject matter.

Nevertheless, to expedite prosecution, Applicants have amended the claims to more particularly point out the claimed subject matter. Specifically, the patched proteins for use in the claimed methods are described with respect to both their sequence and their function. Accordingly, one of skill in the art can readily envision the claimed subject matter. Applicants note, however, that Applicants' amendments are not in acquiescence to the rejection. Applicants reserve the right to prosecute claims of similar or differing scope.

b. The recitation of "the" patched protein allegedly lacks antecedent basis. Applicants' amendments to the claims are believed to obviate this aspect of the rejection.

c. The recitation of "said candidate protein" in line 3 of claim 20 allegedly lacks antecedent basis. Applicants' amendment to claim 20 is believed to obviate this aspect of the rejection.

d. The Office Action alleges that claim 20, which was dependent upon claim 1, was unclear because the relationship between the composition of claim 1 and claim 20 was unclear. Applicants have amended claim 20 to present the claim subject matter as an independent claim. Applicants' amendment is believed to obviate the rejection.

e. The Office Action alleges that certain language recited in claim 21 is ambiguous. Applicants respectfully disagree and contend that claim 21 was clear and concise as filed. Nevertheless, Applicants note that claim 21 is hereby canceled as part of this response. Applicants' cancellation of claim 21 renders this rejection moot.

3. Claims 20 and 21 are rejected under 35 U.S.C. 112, first paragraph, for allegedly failing to enable one of skill in the art to practice the claimed invention. Applicants traverse this rejection and contend that the rejection is moot in light of Applicants' amendments to claim 20 and Applicants' cancellation of claim 21.

The basis of the rejection appears to be whether Applicants are enabled for methods of screening using patched proteins other than naturally occurring patched proteins. Applicants

contend that the application is broadly enabling, and provides patched nucleic acids and polypeptides isolated from a variety of invertebrate and vertebrate species. Furthermore, the claimed subject matter is defined using both structural and functional limitations. These features not only allow one of skill in the art to readily envision the patched proteins for use in the claimed methods, but also exclude from the scope of the claims non-functional variant sequences or such variants that do not bind hedgehog polypeptides.

The Examiner further argues that it would constitute an undue burden to identify cells capable of recapitulating the complex hedgehog-patched signaling pathway using either a naturally occurring or variant patched protein. Applicants respectfully disagree with the Examiner's unsupported assertion. Given that hedgehog-patched signal transduction is conserved across phyla, one of skill in the art would reasonably expect to be able to practice the claimed invention in virtually any cell type. Furthermore, Applicants note that this aspect of the rejection is no longer applicable to the pending claims. Specifically, Applicants have canceled claim 21 thereby rendering rejection of claim 21 moot. Claim 20 does not require modulation of hedgehog-patched signaling in the cell, and thus this aspect of the rejection is not applicable to claim 20.

Applicants contend that the claims are enabled throughout their scope. One of skill in the art can readily make and use both naturally occurring and variant patched polypeptides in the claimed screening methods based on the detailed disclosure and based on the high level of skill in the art. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

4. Claim 21 is rejected under 35 U.S.C. 102(b) as allegedly anticipated by Forbes et al. Applicants traverse this rejection and contend that the rejection is moot in light of the amended claims.

Forbes et al. fail to satisfy the criteria for anticipating Applicants' invention. Both the MPEP and the Federal Circuit support Applicants' contention that in order to anticipate or render obvious the claimed invention, the cited art must teach all the limitations of the claimed subject matter (MPEP 2131). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

*Verdegall Bros. v. Union Oil Company of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the .... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ3d 1913, 1920 (Fed. Cir. 1989).

Forbes et al. fail to teach the particular combination of elements of the pending claims. Specifically, the cited reference fails to teach the use of cells carrying a patched reporter construct to screen exogenously added compounds in order to identify compounds that modulate hedgehog signaling. Given that the cited reference fails to teach or suggest an essential element of Applicants’ claim, the cited reference fails to anticipate the claimed subject matter.

Nevertheless, to expedite prosecution of claims directed to other commercially relevant embodiments of the invention, Applicants have canceled claim 21. Cancellation of claim 21 is not in acquiescence to this or other grounds of rejection raised in this Office Action. Cancellation of claim 21 renders the rejection moot, and Applicants request reconsideration and withdrawal of this rejection.

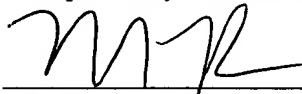
**CONCLUSION**

In view of the foregoing amendments and remarks, Applicants submit that the pending claims are in condition for allowance. Early and favorable reconsideration is respectfully solicited. The Examiner may address any questions raised by this submission to the undersigned at 617-951-7000. Should an extension of time be required, Applicants hereby petition for same and request that the extension fee and any other fee required for timely consideration of this submission be charged to **Deposit Account No. 18-1945**.

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Respectfully Submitted,



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